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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,785	04/20/2001	Ted Lau	51831AUSM1	9790

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EXAMINER
DAVIS, MINH TAM B

ART UNIT	PAPER NUMBER
1642	8

DATE MAILED: 08/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/838,785	LAU ET AL	
	Examiner	Art Unit	
	MINH-TAM DAVIS	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) *1-27 and 30-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Applicant's election with traverse of group III, claims 28, 29, species SEQ ID NO:2 in Paper No. 7 is acknowledged. Further, a telephone conversation with Wendy Washtien on 31 July, 2002 results in an election of the species radioisotopes for the immunoconjugate used in the elected invention. The traversal is on the ground(s) that 1) the five groups, each encompasses claims 28-29, have overlapping subject matter, and the election of the single species of SEQ ID NO:2 for examination insures that the Examiner will include all the five sequence fragments, from which the five groups derive, in any search, and 2) the description of group 16, claim 30 is incorrect, which should be rewritten as drawn to a method of treating a disease state associated with inappropriate expression of PROST 03, comprising administering a ribozyme. This is not found persuasive because 1) a method of treating a disease, using an antibody specific for the full length sequence of SEQ ID NO:2 is generic and does not necessarily read on a method of treating a disease, using an antibody specific for specific fragments of SEQ ID NO:2, and 2) Contrary to Applicant assertion, since claim 30 clearly recites a method of treating a disease state associated with inappropriate expression of PROST 03, comprising administering a polypeptide of SEQ ID NO:2, fragments or variants thereof, the description of group 16, claim 30 is correct.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims 28-29, species SEQ ID NO:2 and radioisotopes are examined in the instant application.

SEQUENCE RULE COMPLIANCE

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. 1.821-25 for the following reasons:

Figure 3 and 4 legends refer to sequences which lack sequence identification numbers.

Claim Rejections - 35 USC § 112 SECOND PARAGRAPH

Claims 28-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claims 28-29 are indefinite, because claims 28-29 depend on non-elected claim 24. The objection can be obviated by amending claims 28-29 to recite the limitations of claim 24, and rewriting the claim in independent form.

2. Claims 28-29 are indefinite, for the use of the language "biologically active fragment of SEQ ID NO:2" in claim 24 to which claims 28-29 depend. It is not clear what type of biological activity is referred to.

3. Claim 29 is indefinite for the use of the designation "PROST 03" as the sole means of identifying the claimed protein. The use of laboratory designation only to identify a particular protein renders the claim indefinite because different laboratories may use the same laboratory designations to define completely distinct proteins.

Amendment of the claims to include physical and/or functional characteristics of "PROST 03" which unambiguously define "PROST 03" is required.

4. Claim 29 is indefinite for the use of the language "associated". It is not clear what type of association is referred to.

REJECTION UNDER 35 USC 112, FIRST PARAGRAPH, WRITTEN DESCRIPTION

The instant specification does not contain a written description of the invention in such full, clear, concise, and exact terms or in sufficient detail that one skilled in the art can reasonably conclude that applicant had possession of the claimed invention at the time of filing.

Claims 28-29 are rejected under 112, first paragraph.

Claim 28 is drawn to a method for selectively destroying a cell expressing SEQ ID NO:2, comprising reacting an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising "a biologically active fragment" or "an immunogenic fragment" of SEQ ID NO2. Claim 29 is drawn to administering a method for treating a disease-state in a patient, which disease-state is associated with the expression of PROST 03, comprising administering an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising "a biologically active fragment" or "an immunogenic fragment" of SEQ ID NO2.

The specification discloses a deduced polypeptide sequence of SEQ ID NO:2, which is prostate specific, and expressed in both normal and cancerous prostate tissue,

and in metastatic prostate cells (Example 5 on page 43 and figure 6) There is however no description of any fragment that confers the biological activity of SEQ ID NO:2.

Further, although the specification describes antibodies to fragments of SEQ ID NO:2, comprising peptides 4, 5, 7, 8, 10, 11 or peptides of SEQ ID Nos: 19, 20, 21, 23, 24, 26 wherein said antibodies are specific to SEQ ID NO:2 or PROST 03 (Example 4 on page 42), the claims encompass a method for killing a cell or a disease, comprising administering an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising "any immunogenic fragment" of SEQ ID NO:2, the structure of which fragment is not disclosed. Further, the claims encompass a method for killing a cell or a disease, comprising administering an immunoconjugate of an antibody or fragment thereof, which binds to a non-related polypeptide comprising an immunogenic fragment of SEQ ID NO:2, i.e a non-related polypeptide which shares a fragment with SEQ ID NO:2.

Although drawn specifically to the DNA art, the findings of *The Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412) are clearly relevant to the instant rejection. A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to members of the genus, which features constitute a substantial portion of the genus. The instant specification fails to provide sufficient descriptive information, such as definitive strutural or functional features of the claimed genus of polypeptides that comprise an immunogenic fragment of SEQ ID NO:2. There is no description of the conserved

regions which are critical to the structure and function of the genus claimed. Structural features that could distinguish the compounds in the genus from others excluded are missing from the disclosure.

Further, At section B(1), the court states that "An adequate written description of a DNA...'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention". The instant specification fails to provide sufficient descriptive information, such as definitive strutural or functional features of the claimed biologically active fragment of SEQ ID NO:2.

One of skill in the art would therefore reasonably conclude that the disclosure fails to provide a representative number of species to describe and enable the genus as broadly claimed. Thus, only a method of killing a cell expressing SEQ ID NO:2 or a method of treating prostate cancer comprising administering antibodies specific for SEQ ID NO:2, but not the full breadth of the claims meet the written description provisions of 35 USC 112, first paragraph.

REJECTION UNDER 35 USC 112, FIRST PARAGRAPH, SCOPE

If Applicant could overcome the above 112, first paragraph rejection, claim 29 is still rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for treating prostate carcinoma or metastatic prostate cancer, does not reasonably provide enablement for a method for treating an disease associated with the expression of SEQ ID NO:2. The specification does not enable any

person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claim 29 is drawn to a method for treating a disease-state in a patient, which disease-state is associated with the expression of PROST 03, comprising administering an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising SEQ ID NO:2, a biologically active fragment or an immunogenic fragment thereof.

Claim 29 encompasses a method for treating any disease "associated" with the expression of PROST 03, comprising administering an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising SEQ ID NO:2, a biologically active fragment or an immunogenic fragment thereof.

The specification discloses that SEQ ID NO:2 is prostate specific, and expressed in both normal prostate tissue and prostate carcinoma, and in metastatic prostate cells found in bone and lymph node (Example 5 on page 43 and figure 6) There is however no description of the presence of SEQ ID NO:2 in any disease other than prostate cancer, nor any role of SEQ ID NO:2 in any disease.

One cannot extrapolate the teaching in the specification to the scope of the claims, because there is no correlation between SEQ ID NO:2 and any disease. One would not have expected that any disease would be treated with the claimed immunoconjugate which specifically binds to SEQ ID NO:2, because the role of SEQ ID NO:2 in the etiology of any disease is unknown.

For the above reasons, it appears that undue experimentation would be required to practice the claimed inventions with a reasonable expectation of success.

REJECTION UNDER 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al, US PN=6,261562 B1, in view of Sinha, US PN= 6,379,669 B1.

Claim 28 is drawn to a method for selectively destroying a cell expressing SEQ ID NO:2, comprising reacting an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising the amino acid sequence of SEQ ID NO2. Claim 29 is drawn to administering a method for treating a disease-state in a patient, which disease-state is associated with the expression of PROST 03, comprising administering an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising the amino acid sequence of SEQ ID NO2.

Xu et al teach a method for stimulating an immune response in a patient comprising administering a polypeptide of SEQ ID NO:113, which is encoded by a prostate tumor specific polynucleotide (claim 14). Under MPSRCH sequence similarity search, SEQ ID NO:113 is 100% similar to the full length of the claimed SEQ ID NO:2 (MPSRCH search report, 2002, us-09-838-785-2.rai).

Xu et al do not teach a method for killing a cell expressing SEQ ID NO:2 or a method for treating a disease-state in a patient, which disease-state is associated with the expression of PROST 03, comprising administering an immunoconjugate of an antibody or fragment thereof, which specifically binds to a polypeptide comprising the amino acid sequence of SEQ ID NO2.

Sinha et al teach targeting and treatment of prostate cancer comprising administering immunoconjugates comprising an antibody specific for prostate specific antigen and an bioactive agent (column 10, section under "method for conjugation of an antibody to a bioactive substance", bridging column 11, column 14, section under "immunoconjugate treatment of prostate cancer tissues, and columns 19-21, section under "nude mice study"). Sinha et al further teach that said bioactive agent could be a radio-labeled compound or a radionuclide (column 9, first paragraph).

It would have been *prima facia* obvious to a person of ordinary skill in the art at the time the invention was made to obtain an antibody specific for a prostate cancer specific antigen of SEQ ID NO:113 taught by Xu et al, which is the same as the claimed SEQ ID NO:2, for making an immunoconjugate comprising an antibody specific for SEQ ID NO:113 or SEQ ID NO:2 and a radioisotope, and for targeting said immunoconjugate to prostate cancer, using the method taught by Sinha et al, because it is well known in the art that an immunoconjugate specific for prostate cancer could be cytotoxic and effectively used for targeting to prostate cancer, as taught by Sinha et al. One of ordinary skill in the art would have been motivated to target prostate cancer using an

immunoconjugate specific for SEQ ID NO:113 or SEQ ID NO:2 with a reasonable expectation of success.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-TAM DAVIS whose telephone number is 703-305-2008. The examiner can normally be reached on 9:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANTHONY CAPUTA can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0916.

SUSAN UNGAR, PH.D
PRIMARY EXAMINER

MINH TAM DAVIS

August 3, 2002